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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/810,023

03/26/2004

Zhaofu Hu

8416

25859

7590

10/06/2006

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EXAMINER

CANNING, ANTHONY J

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/810,023	Applicant(s) HU ET AL.	
	Examiner Anthony J. Canning	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgement of Amendment

1. The amendment to the instant application was entered on 24 July 2006.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A portion of the claim is missing and the examiner does not know what the limitation of alumina or magnesia is referring to.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones et al. (U.S. 5,534,743).
6. Regarding claim 1, Jones et al. disclose a barrier array for use in a flat panel display including: a shadow mask (see Fig. 8, item 66; column 10, lines 16-17) defining a plurality of

openings (see Fig. 8, item 72; column 10, line 20) therethrough according to a predetermined pattern (lines 2-4 in the abstract say that the figure is formed via differential etching, which the examiner interprets as a predetermined pattern), the predetermined pattern being in accordance with a pixel pattern of a flat panel display (see Fig. 9; column 10 lines 52-63), the shadow mask having an upper and lower surface (see Fig. 8, item 66) and an insulative layer including a first portion layer (see Fig. 8, item 68; column 10, lines 15-17) formed on the upper surface of the shadow mask, a plurality of second portions (see Fig. 1, item 70; column 10, lines 15-18), and a third portion formed on the lower surface of the shadow mask (see Fig. 8, item 64; column 10, lines 15-17), the second portions disposed in the respective openings and connecting the first portion with the third portion (see Fig. 8).

7. Regarding claim 2, Jones et al. disclose the barrier array as described in claim 1, wherein the shadow mask is made from a material selected from the group: invar, low carbon steel, or another suitable metal alloy. Item 28 of figure 7 corresponds to item 66 of figure 8. In column 10, line 17, it is disclosed that the perforated metal layer (items 28 and 66) is an electrode. Jones et al. disclose, in lines 23-27 of column 10 that any suitable material may be used in the layers and components of a flat panel display. In Table 1 (column 7), step 4 of the manufacturing process is of a conductor using the alloy of Cr-Cu-Cr, which is an appropriate metal for the perforated metal layer. The coefficient of thermal expansion of Cr-Cu-Cr¹ is close to that of glass², which is used as the substrate in the flat panel display of Jones et al..

¹ 9.91PPM/K, according to Williams Advanced Materials company

² 9.93PPM/K, SiO₂-Na₂O (23% mol Na₂O) glass, Material Science and Engineering Handbook

8. Regarding claim 3, Jones et al. disclose the barrier array as described in claim 1, wherein the insulative layer comprises alumina or magnesia (column 6, lines 15-16). Jones et al. specify alumina.

9. Regarding claim 18, Jones et al. disclose a barrier array for use in a flat panel display including: a metal plate (see Fig. 8, item 66; column 10, lines 15-17) including a plurality of openings (see Fig. 8, item 72; column 10, lines 18-19) therethrough according to a pixel pattern of a flat panel display (column 10 lines 52-63), the shadow mask having an upper and lower surface (see Fig. 8, item 66), opposite to one another; and an insulative including a first portion layer (see Fig. 8, item 68; column 10, lines 15-17) formed on the upper surface of the shadow mask and a plurality of second portions extending from the first portion into the respective openings and formed on the inner edges of the metal plate that bound the respective openings (see Fig. 8, item 70; column 10, lines 15-18).

10. Regarding claim 20, Jones et al. disclose the barrier array as described in claim 18, wherein the insulative layer includes a third portion formed on the lower surface of the metal plate (see Fig. 8, item 64; column 10, lines 15-17).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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12. Claims 4, 5 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (U.S. 5,534,743).

13. As to claims 4, 5 and 22, Jones et al. disclose the barrier array as described in claims 3 and 18. Jones et al. fail to disclose that the thickness of the insulative layer being between 10-500 μm . It would have been obvious to one having ordinary skill in the art at the time the invention was made to disclose that the thickness of the insulative layer being between 10-500 μm , since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

14. In light of the amendments a new rejection has been given.

Contact Information

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Canning 

29 September 2006


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